

REMARKS

Reconsideration of this application is respectfully requested.

Claims 1-7, 9-16 and 18 are pending in the application, with Claims 1, 3, 6, 10, 12 and 15 being the independent claims.

The Examiner rejected Claims 1, 3, 5, 10, 12 and 14 under 35 U.S.C. §103(a) as being unpatentable over U.S. Publication No. 2003/0002471 to *Crawford et al.* (hereinafter, *Crawford*) in view of *Applicant's Acknowledged Prior Art* (hereinafter, *AAPA*). Claims 6, 7, 9, 15, 16 and 18 have been allowed. Applicants acknowledge the indication of allowable subject matter in Claims 2, 4, 11 and 13.

Regarding the §103(a) rejection of Claims 1, 3, 5, 10, 12 and 14, the Examiner contends that each element of Claim 1 is taught or suggested by the combination of *Crawford* and *AAPA*. More specifically, the Examiner contends that *Crawford* discloses each element of Claim 1 with the exception of transmitting the multiplexed preambles as a preamble of the Ultra WideBand (UWB) communication system. The Examiner cites *AAPA* in an attempt to remedy this deficiency.

Claim 1 recites an apparatus for transmitting a preamble in a UWB communication system. The apparatus comprises a first preamble generator for generating a first preamble for synchronization using an aperiodic sequence with an aperiodic correlation property. The apparatus also comprises a second preamble generator for generating a second preamble for channel estimation using the aperiodic sequence. The apparatus further comprises a transmitter for multiplexing the first and second preambles and transmitting the multiplexed preambles as a preamble of the UWB communication system.

Crawford discloses a method for estimating carrier-to-noise-plus-interference ratio for OFDM waveforms, which makes use of a physical waveform frame structure including a

diversity selection portion. *Crawford* describes a preamble portion of a PHY-layer frame that includes a short symbol portion and a long symbol portion. The short symbol portion may be used for timing synchronization, and the long symbol portion may be used for channel estimation.

Crawford describes that the signals used in the long symbols are time periodic, as well as periodic OFDM frequency bins. However, *Crawford* fails to disclose that a preamble portion for synchronization is generated using an aperiodic sequence with an aperiodic correlation property, as recited in Claim 1. *Crawford* also fails to disclose that a preamble portion for channel estimation is generated using the aperiodic sequence, as recited in Claim 1. *AAPA* fails to remedy these deficiencies of *Crawford*. Therefore, Claim 1 is patentable over the combination of *Crawford* and *AAPA*.

The Examiner also rejected independent Claims 3, 10 and 12 under 35 U.S.C. §103(a). Claims 3, 10 and 12 recite utilization of an aperiodic sequence in generating at least one of the preamble portions. Thus, Claims 3, 10 and 12 contain similar subject matter to that of Claim 1. In view of the above, Claims 3, 10 and 12 are also patentable over the combination of *Crawford* and *AAPA*.

Regarding Claims 5 and 14, while not conceding the patentability of the dependent claims, *per se*, Claims 5 and 14 are also allowable for at least the above reasons. Accordingly, Applicants assert that Claims 1, 3, 5, 10, 12 and 14 are allowable over the combination of *Crawford* and *AAPA*, and the rejection under 35 U.S.C. §103(a) should be withdrawn.

Accordingly, all of the claims pending in the Application, namely, Claims 1-7, 9-16 and 18 are believed to be in condition for allowance. Should the Examiner believe that a telephone conference or personal interview would facilitate resolution of any remaining matters, the Examiner may contact Applicants' attorney at the number given below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Paul J. Farrell", written over a horizontal line.

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